DuPont Chestnut Run Plaza

Center and Faulkland Roads
Wilmington, DE 19898
EPA ID #: DED003930799
Last Updated: April 19, 2006

Current Progress at the Site

In 1991, DuPont and DNREC both conducted a separate RCRA Facility Assessment (RFA) at DuPont Chestnut Run Plaza, which identified potential areas of interest at the site that may be subject to corrective action. In September 1996, DNREC recommended "no further action" for continued corrective action at the DuPont Chestnut Run facility. DNREC based this recommendation on information collected during the site visits and through researching facility files and historic records.

In order to make a final determination, EPA and DNREC plan to schedule a follow-up site visit to the DuPont Chestnut Run facility in May 2006. At this visit, they will review not only the previously identified areas of interest, but also assess new areas that could potentially be subject to the corrective action process.

Site Description

DuPont Chestnut Run Plaza is a 240-acre facility located on the northeast corner of Center and Faulkland Roads in Wilmington, Delaware. It is a multi-department research facility that consists of nineteen (19) buildings. Departments currently operating at the facility include research and development labs for fibers, imaging, chemicals, polymers, and most recently hydrogen fuel-cells.

Lancaster Court Apartments is located to the north of the facility, Faulkland Road to the south, Reading Railroad to the east, and Center Road to the west. The DuPont Experimental Station is also located just a few miles from DuPont Chestnut Run Plaza.

Site Responsibility

DNREC is the lead agency for the RCRA Corrective Action program at the DuPont Chestnut Run facility, with support provided by the EPA.

Contaminants

DNREC will identify contaminants of concern during the investigation phase of the corrective action process.

Community Interaction

Plans for community involvement are under development.

Institutional Controls

No institutional controls are currently in place at the Chestnut Run site.

Government Contacts

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Facility Contact

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Lancaster Pike & Rt. 141
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EPA Prep notes for 5/26/06 Site Visit

Dupont Chestnut Run Site Summary
May 25, 2006

Short Summary:

Located on 240 acres 4000 feet west of incorporated limits of the City of Wilmington
Residential and educational use on adjacent properties
Public water supply - (confirm)
Groundwater 25-30 feet deep
Streams flow through property - Willow Run originates, Chestnut Run East and West Branchs
Initial buildings built in 1952 (formerly a farm)
In 1991: 19 buildings, 8 buildings office space
Employed 3200 people
1 Permitted Storage Pad

1991 Clean Air Act status:

11 air discharge permits for process vents & boilers
75 air discharge exemptions - generally for lab hoods and small scale process vents

Little impervious property is apparent in 1991 photographs

Manages: Fibers, Imaging, Chemicals, Polymers, formerly Electronics
Chemicals: electrochemicals for plating, and etching, copper, etc. (See unit 13)
freon, freon alternatives
pigment research
paints
photography - silver halide technology
printing solvent waste (see unit #19)
solvents, lab chemicals, oils
acetone
ink waste
nonyl acetates
benzyl alcohol
ketones including MIBK
asbestos
heat transfer oil
teflon
carbon black

Haz waste quantities: 311,000 lbs 1987; 266,000 lbs 1988; 92,000 lbs 1989

Assessment History

June 1991: RFA prepared by Dupont - identified 16 SWMUs

September 1991: RFA prepared by DNREC)

Identified 27 SWMUs and 3 AOCs
VSI - July 17, 1991

April 15, 1996: Dupont Evaluation

Evaluated waste management practices
-throughout operational history, no waste material disposed on site
-no outdoor waste disposal or waste pits
-no onsite chemical waste disposal
-due to county sewer hookup since inception, no onsite septic system
Rreviewed aerial photography
-1961 and 1968 38"x38" enlarged sectionals
-1989 oblique aerial view
-interviewed employees to determine historical building use
Provided a construction chronology
-buildings operated from 1953 to present
Identified SWMUs not listed in 1991 RFA

September 11, 1996: DNREC Evaluation

3 AOCs identified/addressed by DNREC; DNREC determined NFA

1. SWMU 9: Building 711(E) Crawl Space
   - oil leaks from overhead machinery
   - February 1991 investigation by Dupont
     -soil discolored to 5 ft deep
     -total TPH to 38000 ppm
   - May 1991 (four?) soil borings installed around building
     -identified 15 to 20 feet of clay-silt overlying weathered bedrock
     -groundwater occurs primarily in weathered bedrock with minor areas of perched water in the clay silt layer
   -June 1991 crawl space capped with concrete;
     -eliminated dripping on to exposed soils
   -DNREC determined TPH migration potential is minimal
     -location below building limits rainwater infiltration
     -contamination occurs in low permeability clay-silt
     -TPH biodegrade relatively easily

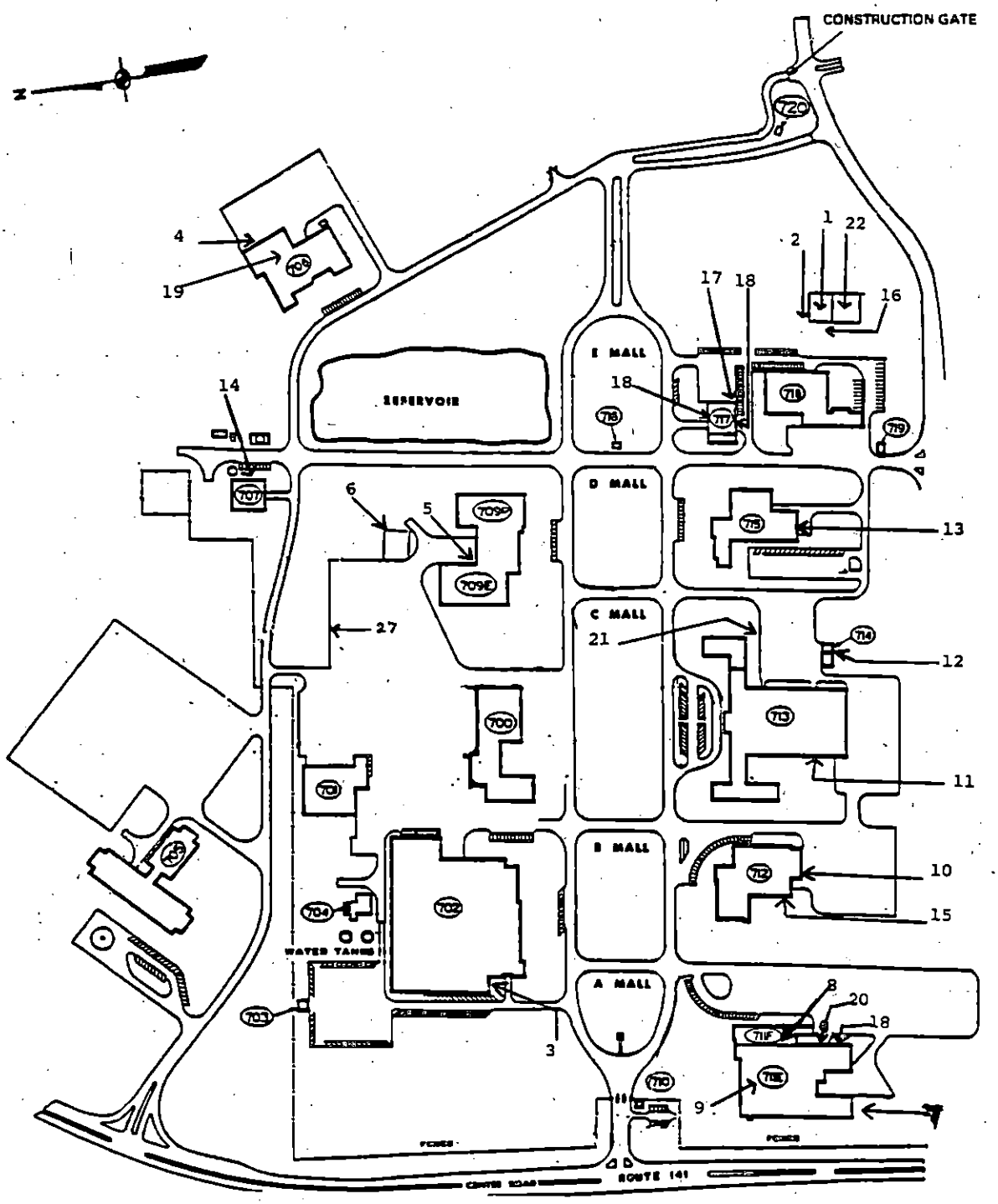
2. SWMU 7: Building 711 (E) 90 Day Hazardous Waste Accumulation Area
    - -80 foot by 30 foot concrete pad enclosed by a metal wall, a chain link fence, and a metal roof
    - -March 1996 DNREC inspection
        - -small qty of liquid in sump & staining on collection system grate
        - -no reading on PID
    - -Dupont
        - -weekly inspection for fluid and cracks
        - -annual thorough sump cleaning
            - -fluid s tested for pH and evaluated for proper disposal
        - -no cracks through time of March 1996 inspection

3. AOC 4: Fuel Oil Tank Truck Unloading Area
    - -concrete pad w/ 3 ft. walls on 3 sides
    - - contains pipes for fuel transfer from trucks to fuel tank
    - -adjacent asphalt road slopes down to a concrete containment trench
    - -March 1996 DNREC inspection
        - -oil drips observed by pipe coupling/transfer area
        - -pad adequately containing drips from pipe couplings

FIGURE 8

CHESTNUT RUN SITE

SWMU LOCATION MAP



NOTE:
- o SWMU #23 and #24 are located within SWMU #22, therefore not shown.
- o SWMU #25 consists of 41 separate refuse dumpsters located throughout the property. Not shown.
- o SWMU #26 consists of 13 separate white paper recycling dumpsters located throughout the property. Not shown.

SWMU Summary:

SWMUs 1 through 16 identified by Dupont in 1991 RFA
SWMUs 17 - 27 and AOCs 1-3 identified by DNREC in 1991 RFA
AOC 4 identified by DNREC in 1996 assessment

SWMU 1: RCRA Permitted Hazardous Waste Pad - East of Building 718

SWMU 2: RCRA Interim Status Hazardous Waste Storage Area

East of Building 718, near SWMU 1

closure status?

SWMU 3: Non- Hazardous Waste Storage Area - Building 702

SWMU 4: 90-Day Hazardous Accumulation Area - Building 708

SWMU 5: 90-Day Hazardous Accumulation Area - Building 709

SWMU 6: Test Equipment Storage Pad - Building 709

SWMU 7: 90-Day Hazardous Waste Accumulation Area - Building 711(E)

-see DNREC 1996 assessment

SWMU 8: 90-Day Hazardous Waste Accumulation Area - Building 711(F)

SWMU 9: Crawlspace - Building 711(E)

-see DNREC 1996 assessment

SWMU 10: 90 Day Hazardous Waste Accumulation Area -Building 712

SWMU 11: Non-Hazardous waste oil storage area- Building 713

SWMU 12: Non-Hazardous Waste Storage Area- Building 714

SWMU 13: 90 Day Hazardous Waste Accumulation Area -Building 712

SWMU 14: Underground Pipe Between Fuel Storage Tank and Power House (by building 707)

SWMU 15: Polyester Resin Cooling Dock and Refuse Dumpster (Building 712)

SWMU 16: Non-Hazardous Waste Storage Area (East of Building 718)

SWMU 17: Satellite Accumulation Area - Building 717

SWMU 18: Saw Dust Accumulation System- Building 717

SWMU 19: Satellite Accumulation Area - Building 708

SWMU 20: Carbon Black Dust Collection Unit- Building 711-E

SWMU 21: Process Polymer Waste Dumpsters - Building 713

SWMU 22: Scrap Metal Storage Area - East of Building 718

SWMU 23: Scrap Metal Dumpster - East of Building 718 with SWMU 22

SWMU 24: Asbestos Dumpsters - East of Building 718 with SWMU 22

SWMU 25: Refuse Dumpsters - 41 Dumpsters throughout the facility

SWMU 26: White Paper Recycling Dumpsters - 13 Dumpsters on property

SWMU 27: Aluminum Can/Plastic Bottle Recycling Bins

AOC 1: Storm Water System

NPDES Permit DE0000566
Chestnut Run Outfalls 001 and 003
Willow Run Outfall 002

outfalls contain storm water mixed with steam and humidity condensate, non-contact cooling water, and other "non regulated activity"

1991 testing included BOD, TSS, pH, temperature, bioassay, chronic and toxic compounds

AOC 2: Sewer System

DNREC concerned with age and condition of the system
Recommended verify the integrity of the underground sanitary piping system

New Castle County Sanitary Sewer Permit - regulated under Clean Water Act
Discharge Points 010 CTC and 011 Main
discharges include sanitary waste, process ww, and boiler & cooling towers water.
Buildings 702, 708 and 717 monitor pH of WW
in 1991, quarterly sampling of discharges for metals, pH, TSS, NH3, BOD, cyanide, and phenolics

AOC 3: Abandoned Underground Storage Tanks

4 USTs installed in 1954, emptied and abandoned in 1957
a. Building 704 - #2 fuel oil
b. Building 712 - 13000 gallon tank, #6 fuel oil
c. Building 713 - (2) 20,000 gallon tanks, #6 fuel oil,

AOC 4: Fuel Oil Tank Truck Unloading Area

-see DNREC 1996 assessment

Potential New: - for Discussion

SWMU 28: Former Settling Pond - see page II-2 of RFA

SWMU 29: Sedimentation Pond - see page 5, 4/15/96 DERS letter

AOC 5: Undergound Pipe Lines

AOC 6: Discharges Prior to Permitting

AOC 7: Waste Storage Prior to 1980

Building Evaluation:

Building 700: Administration, start up 1995

Buildings 701 & 702: built mid-1950's
Building 701 start up: 1958
Building 702 start up:1954
Fibers and Composites Development Center-tech support
for textiles, industrial fibers, composites and flooring systems
in 1991, 702 sewer discharge monitored for pH

Building 703: Fire Station/Garage, start up: 1962

Building 704: Refrigeration House, start up 1954

Building 705: Laurel Run, startup 1958

Building 706: Storage Building (near old farm, removed 1987)
startup btw. 1962 and 1968

Building 707: Power House, start up 1961

Building 708: built 1968

Imaging, Medical, Electronics and D-SIMI Business
silver halide technology for photo film
photographic processing solutions
printing plates and printing plate solution development
pre-press proofing
in 1991, sewer discharge monitored for pH
in 1996, Customer Technology Center, Medical Products, External Affairs

Building 709:

built 1958 by the former Electrochemical Department -
Dept. phased out by 1981
early sixties - part of facility devoted to pigment research
- including paints and Lucite paints
1984: Phillips Du Pont Optical research laboratory
R&D of optical disks used for info. systems
in 1991: Chemicals and Phillips DuPont Optical
R&D titanium dioxide pigments in paints and thermoplastics
Development of urethane and terathane
in 1996: 709E: Electronic Specialties Laboratory
709P: Chemicals

Building 710: Main Gate House, start up 1953

Building 711: built 1955

711E:
thermoplastics milling
physical testing center
latex dispersion laboratory
in 1996: elastomers

711F:
Chemicals Department: Freon customer service center
analysis of Freon and Freon alternatives, refrigerant products, aerosols and foams

Building 712: built 1954

1954-1975- tech support for cellophane film
in 1991- polymer packaging development
plastic & Teflon molding, extrusion, product test
in 1996- Domestic Customer Service

Building 713: startup 1954

1975 to 1984 - tech support for cellophane film
in 1991- polymer packaging development -
plastic & Teflon molding, extrusion, product testing
in 1996- Technical Services Laboratory

Building 714: Technical Services Laboratory, startup 1954

Building 715: startup 1961
former Industrial and Biochemical Department - develop molding/casting cores
in '70's, Electrochemicals Dept. - plating research - gold leaf, electronics, photo products etching, electronics etching
in 1991, Fibers Department - expansion of 701/702, above
in 1996, Electronic Materials Laboratory

Building 716: Pump House, start up 1955

Building 717: start up 1958
1981 - Engineering Dept.
in 1991-Materials, Logistics Services, site maintenance shop
maintenance, fabrication and repair of equipment &machinery, welding, and sheet metal milling
in 1991, sewer discharge monitored for pH
in 1996, Transportation/Service

Building 718: start up 1958

in 1991: central shipping, receiving and storehouse for entire site
administers RCRA permitted storage pad, non-hazardous waste storage, and scrap metal yard
in 1996: material handling, purchasing, stores, shipping & receiving

Building 719: Gate House, Start up 1960
Building 720: Construction Gate House, Startup 1986
Building 721: Maple Run, Start up 1988
Building 722: Walnut Run, Start up 1988
Building 723: Hickory Run, Start up 1988
Building 724: Credit Union, Start up 1988
Building 725: Picnic Pavillion, Start up 1989

Groundskeeper Shed - behind Building 717

Questions: For Discussion

SPCC
boring logs - preconstruction; and by 711
sewer assessment?
underground pipelines?
historic fuel sources
building machinery drip collection method?
waste management prior to regulatory requirements (prior to1980?)
send off site: 311,000 lbs. in 1987
266,500 lbs. in 1988
92,430 lbs. in 1989
discharges prior to permitting
former settling pond (DNREC RFA p. II-2)
sedimentation pond, page 5, 4/15/96 DERS letter
confirm water supply
(does Wilmington water supply extend outside of incorporated Wilmington to the surrounding area)
state jurisdiction- secondary containment?

Robert Greaves

STATE OF DELAWARE
DEPARTMENT OF NATURAL RESOURCES
& ENVIRONMENTAL CONTROL
DIVISION OF AIR & WASTE MANAGEMENT
89 KINGS HIGHWAY
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DOVER, DELAWARE 19903

WASTE MANAGEMENT
SECTION

HAZARDOUS WASTE: (302) 739 - 3689
SOLID WASTE: (302) 739 - 3820
FAX.: (302) 739 - 5060

September 11, 1996

Ms. Wanda Martinez
USEPA Region III (3HW90)
841 Chestnut Building
Philadelphia, PA 19701

Subject: DuPont Chestnut Run HSWA Permit
Re: DED003930799; File Code

Dear Ms. Martinez:

The State of Delaware, Department of Natural Resources and Environmental Control (DNREC) Hazardous Waste Branch (HWMB) has determined that further Corrective Action is not warranted at the DuPont Chestnut Run facility. During the 1996 RCRA 3011 grant year, the HWMB reviewed facility records, conducted meetings and site visits with facility representatives, and required DuPont to provide additional information to supplement RCRA Facility Assessments which were conducted in 1991.

The June 1991 RCRA Facility Assessment (RFA) conducted by DuPont and the September 1991 RFA conducted by DNREC identified three areas of concern:

1. **Building 711 (E) Crawl Space** (DNREC and DuPont RFA).
   The crawl space soil is contaminated with oil that leaked from overhead milling machinery. A crawl space soil investigation conducted by DuPont in February 1991 revealed localized areas of soil discoloration up to 5 ft deep. Total petroleum hydrocarbon (TPH) was detected at levels up to 38,000 ppm. Soil borings installed around Building 711 in May 1991 indicate that the area consists of 15 ft to 20 ft of clay-silt overlying weathered bedrock. Groundwater occurs primarily in the weathered bedrock with minor areas of perched water in the clay silt layer. DuPont capped the crawl space with concrete in June 1991.

2. **Building 711 (E) 90 Day Hazardous Waste Accumulation Area** (DNREC RFA).
   The accumulation area consists of a 80 ft x 30 ft concrete pad enclosed by a metal wall, a chain link fence and a metal roof. DNREC representatives observed a small amount of liquid in the pad's concrete sump and staining on the collection system grate during the RFA site visit. No readings were observed on the photoionization detector. DuPont visually inspects the sump weekly for fluid and cracks and thoroughly cleans the sump annually. Fluid present in the sump is tested for pH and examined for appearance and odor to determine the proper disposal method. No cracks have been observed in the sump to date.

3. **Fuel Oil Tank Truck Unloading Area** (DuPont RFA).
The tank truck unloading area is composed of a small concrete pad with 3 ft walls on 3 sides and pipes for transferring fuel from trucks to the fuel tank. The adjacent asphalt road slopes down to a concrete containment trench. The area around the pipe couplings shows visual evidence of oil dripping during transfer. Visual inspection of the unloading area by DuPont and HWMB representatives in March 1996 indicated that the pad was adequately containing any oil drips from the pipe couplings.

The supplementary investigation completed by DuPont in April 1996 (attached) did not identify any additional areas of concern.

The HWMB feels that the actions taken by DuPont at the 3 areas of concern described above eliminate the need for further action at these units at this time.

- The concrete cap installed in Building 711's crawl space eliminated the dripping of oil onto exposed soils. The potential for migration of the TPH contamination is minimal because: 1) the contaminated area's location underneath a building limits infiltrating rainwater as a means of transport; 2) the contamination occurs in low permeability clay-silt; and 3) TPH biodegrade relatively easily.
- No evidence exists that the Building 711 (E) 90 day accumulation area has released contaminants to the environment. DuPont's inspection program appears adequate to detect breaches in the accumulation area sump.
- The truck unloading area pad adequately contains drips from the pipe couplings during fuel transfer preventing release to the surrounding soil.

The HWMB recommends that EPA send a letter to DuPont informing the facility that a HSWA permit is not needed at this time. EPA and DNREC, however, reserve the right to issue a HSWA permit at a later date if releases are suspected.

Sincerely,

E. Alex Rittberg
Program Manager
Hazardous Waste Management Branch.

enc: DuPont's Response to DNREC's Request for Additional Information
March 7, 1996 Meeting Report.

cc: Patti Zietlow
Robert Greaves

EAR:slm

ear96043

MEETING REPORT

MEETING DATE: March 7, 1996
LOCATION: DuPont Chestnut Run
Wilmington, DE

SUBJECT: RCRA Facility Assessment
EPA ID #DED003930799
File Code 13

ATTENDEES:

Sam Cumpston/DuPont	Bob Genau/DuPont
Alex Rittberg/DNREC	Joe Concannon/DuPont
Patti Zietlow/DNREC	Bob Beardsley/DuPont

PURPOSE

Bob Genau arranged this meeting to discuss DuPont's response to DNREC's September 14, 1995 letter requesting information on Chestnut Run's waste disposal practices from 1952-1985.

DUPONT'S FINDINGS

1. Waste Disposal Records

Chestnut Run does not have any records, such as billing receipts, documenting where waste was disposed of in the 1950's, 1960's and 1970's. According to long term facility employees, all waste was shipped off-site for disposal. DuPont did not have any waste disposal sites (such as lab waste pits) at Chestnut Run. Past management made keeping the facility grounds clean a priority because of the customer service nature of the facility.

2. Lab Drains

All lab drains discharge to the sanitary sewer system. Chestnut Run has never had a separate process line (drain) for lab drains. The facility has been hooked up to city sewer and water throughout the facility's history.

3. Aerial Photos

DuPont reviewed aerial photographs from 1962, 1968 and 1989 in an attempt to identify any waste storage or disposal areas not mentioned in DuPont's RCRA Facility Assessment Report (RFA). No disposal sites or areas of distressed vegetation are visible on the photos. All waste storage areas present on the photos were accounted for in the RFA.

The 1962 photo contains three areas not present on subsequent photos. DuPont identified theses areas as a truck maintenance area, a construction staging area, and an office/janitorial supply area. An above ground storage tank is also visible on the 1962 and 1968 photos, but is not present on the 1989 photo. A site schematic from June 1, 1962 identifies the tank as a water tank. Chestnut Run used the water tank to maintain constant positive feed pressure from the city water system.

ADDITIONAL INVESTIGATIVE WORK

DNREC requested that DuPont check the integrity of the Building 711E 90 Day Hazardous Waste Accumulation Area concrete sump. DNREC identified this area as needing further investigation in DNREC's RCRA Facility Assessment Report.

VISUAL INSPECTION OF TANK TRUCK UNLOADING AREA

DNREC and DuPont visually inspected the tank truck unloading area for evidence of releases to the environment. DuPont identified the unloading area as a possible area of concern in the 1991 RCRA Facility Assessment. No evidence of a release was found. The concrete pad and walls appear to adequately contain any drips that occur during fuel unloading.

DUPONT ACTION ITEMS

1) Submit a report to DNREC by April 15, 1996 detailing DuPont's findings on Chestnut Run's waste disposal practices from 1952-1985. Include copies of the aerial photos and the results of the Building 711E Accumulation Area concrete sump evaluation.

REFERENCES

DNREC. 1991. RCRA Facility Assessment of the E.I. DuPont De Nemours and Company, Inc. Chestnut Run Plaza, Wilmington, DE. Prepared by Bruce Cole. Submitted to U.S. EPA Region III September 20, 1991.

DNREC. 1995. September 14, 1995 letter from Alex Ritttberg\DNREC to Carol Lapenta\DuPont.

DuPont. 1991. RCRA Facility Assessment Case #3HW51. Chestnut Run Plaza Wilmington, DE. June 1991. Prepared by DuPont Solid Waste and Geological Engineering.

Report Prepared By: Patti Zietlow

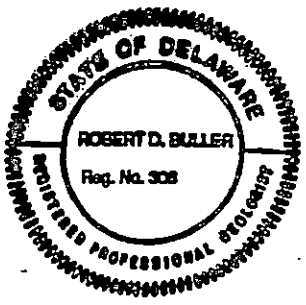
STATUS REPORT
RESPONSE TO SEPTEMBER 14, 1995, DNREC LETTER

DuPont Chestnut Run Facility
Wilmington, Delaware

April 15, 1996 **DERS Project No. 3352**

Prepared by

DuPont Environmental Remediation Services
Barley Mill Plaza 27
P.O. Box 80027
Wilmington, Delaware 19880-0027



CONTENTS

1.0 INTRODUCTION

The Delaware Department of Natural Resources and Environmental Control (DNREC) reviewed the Resource Conservation and Recovery Act (RCRA) facility assessment (RFA) submitted by DuPont in its March 28, 1993 RCRA Part A and Part B permit application for the DuPont Chestnut Run facility in Wilmington, Delaware. In a September 14, 1995, letter from the DNREC Hazardous Waste Management Branch (HWMB), the HWMB questioned whether all historical solid waste management units (SWMUs) were identified because units no longer in existence when the RFA was conducted may not have been included in the RFA. The letter also requested that DuPont assist the DNREC by

- Discussing waste management practices.
- Reviewing aerial photography.
- Providing a construction chronology.
- Identifying SWMUs not listed in the 1991 RFA.
- Recommending SWMUs requiring a Verification of Release Investigation (VI) of a RCRA facility investigation (RFI).

On March 7, 1996, representatives of DuPont, DNREC, and DuPont Environmental Remediation Services (DERS) met at the Chestnut Run facility to present and discuss the findings of the study conducted by DERS in response to the September 14, 1995 letter. This status report summarizes the findings that were presented in the March 7, 1996 meeting.

2.0 METHODOLOGY

Aerial photographs of the site were studied to address many of the concerns that the DNREC had expressed in its letter. Two 38-by-38-inch enlarged sectionals were obtained from 1961 (AHQ 1AA 156-C) and 1968 (AHQ 2JJ 70-L) aerial photographs from the United States Department of Agriculture. In addition, oblique view aerial photographs from 1989 were obtained from Chestnut Run personnel (all three aerial photographs will be sent to the DNREC under separate cover).

These aerial photographs were used to identify potential land disposal areas, document construction chronology, and past land uses. Photographs were compared to one another and variances between photographs were identified using a color code to differentiate between buildings missing since the last photograph and buildings that were new since the last photograph. After the variances between photographs were identified, the photographs were taken to the site and plant employees were interviewed by Mr. Sam Cumpston (Chestnut Run facility) to determine the historical building use. Interviewed personnel had been employed at the Chestnut Run facility for a long period of time. One employee interviewed, Mr. William Lee, has worked at the Chestnut Run facility for over 35 years.

3.0 FINDINGS

The Chestnut Run facility was constructed in the mid-1950s. The site was designed to have "curb appeal" for potential DuPont customers. The following subsections document information obtained from aerial photography review and from personnel interviews.

3.1 Waste Management Practices

Throughout the operational history of the Chestnut Run facility, no waste material has ever been disposed of on-site. The wastes generated on-site are the result of product development. Wastes are generated in small, irregular batches consisting of small packages of discarded laboratory chemicals, small sample mixes, excess and spent batches used in machine applications and discarded test products. Most of the site chemical wastes are nonhazardous. The hazardous wastes are principally spent organic solvents from nonspecific sources, various characteristic wastes, and lab-packs.

Wastes are stored and shipped, for the most part, in bung and 55-gallon steel or fiber drums. Occasionally, smaller lots of specialized wastes are shipped in small cartons or less than 55-gallon steel or fiber drums. Small containers (less than 5 gallons) are overwrapped as lab-packs in compatible chemical groupings.

The DuPont Chestnut Run facility submits an annual hazardous waste report to the DNREC HWMB. Waste disposal manifest documentation and land ban forms older than five years are not kept on file at the site. Waste at the site was picked up by Chem Waste for disposal and sent to a permitted RCRA facility. Outdoor laboratory waste disposal areas or pits were not used. No chemical wastes have been disposed of at the site or at any on-site landfills. Because the site has been on county sewer and water since its inception, no on-site septic systems exist.

3.2 Building Construction Chronology

The following table documents the building chronology of various buildings on the Chestnut Run facility and their associated startup dates.

Building Number	Building Name	Startup Date
700	Administration	1955 (Jan)
701	Oak Run	1958
702	Magnolia Run	1954 (Jan)
703	Fire Station/Garage	1962
704	Refrigeration House	1954
705	Laurel Run	1958
706	Storage Bldg. (near old farm; removed 1987)	BTW. 1962-1968
707	Power House	1961 (Nov)
708	Customer Technology Center, Medical Products, External Affairs	1968
709E	Electronic Specialties Laboratory	1958 (Apr)
709P	Chemicals	1958 (Apr)
710	Main gate House	1953
711E	Elastomers	1955 (Dec)
711F	Freon Products Laboratory	1956 (Jan)
712	Domestic Customer Service	1955 (Apr)
713	Technical Services Laboratory (TSL)	1954 (Sept)
714	TSL (Bldg. 2)	1954 (Sept)
715	Electronic Materials Laboratory	1961
716	Pump House	1955
717	Transportation/Service	1958
718	Material Handling, Purchasing, Stores, Shipping & Receiving	1958
719	Gate House	1960
720	Construction Gate House	1986
721	Maple Run	1988 (May)
722	Walnut Run	1988 (Aug)
723	Hickory Run	1988 (Sept)
724	Credit Union	1988 (Aug)
725	Picnic Pavilion	1989 (May)

Based on review of the three aerial photographs, differences and their explanations are summarized in the following:

- Buildings/changes in 1961 photo that are no longer present in 1968 photograph
  - Buildings east of Building 719 and north to the reservoir were construction buildings and staging areas for building supplies and equipment used by subcontractors while the site was still under active construction.
  - Buildings in the area to the west and north of Building 709, bounded by the reservoir to the east and the power house to the north, were construction buildings and staging areas for building supplies and equipment used by subcontractors while the site was still under active construction.
  - Buildings just to the east of Building 701 were used for maintenance and janitorial storage with some office space. No hazardous waste was stored in these buildings.
  - The building off the southwest corner of Building 701 were believed to be used for truck maintenance.
- New buildings since the 1961 aerial photograph observed in the 1968 photograph
  - Chemical storage pad (SWMU 7) south of Building 711
  - Temporary office trailers in alcove between far west wing and main part of Building 713
  - Building 708
  - Firehouse with fire fighting equipment (Building 703)
  - Added to southeast corner of Building 711
  - Area east of Building 719 and north to the water tank. Buildings 717 (engineering service building) and Building 718 (materials handling) constructed, the northwest corner of Building 718 is storage area for chemicals to be disposed of
  - Sedimentation pond located north of the reservoir
  - Cooling towers for chill water located to the northeast of the power house (Building 707)
  - Building 706 (used to store carpet from fibers) located east of the barn associated with the old farmhouse
  - Rear wing added to Building 705 for more office space
  - Engineering offices and a telephone room added to the northwest corner of Building 700

- A yarn processing area added onto the east side of Building 702
- Building 702 was also added onto on the west side, tire testing area was housed on the first floor and additional office space housed on the second floor

❑ Buildings in 1968 photo that are no longer present in 1989 photograph

- The water tank at the east end of the plaza median
- Building 706, the old farmhouse, and the old farm outbuildings

❑ New buildings since the 1968 aerial photograph observed in the 1989 photograph

- A roof was added to the chemical storage pad (SWMU 7) and two sides of the pad had concrete walls added.
- A RCRA 90-day pad (SWMU 1) was constructed.
- East of Building 717 is a grounds crew building for equipment storage.
- Building 708 (Cyrel) was added onto, building is now occupied by the United States Army.
- A small flammable storage area (SWMU 8) was added to Building 711 (southeast part of building).
- The credit union (Building 724) was constructed in 1988.
- Buildings 721, 722, and 723 were built for additional office space in 1988.
- The picnic pavilion (Building 725) was built in 1989.
- Building 713 had three additions added to it: addition on the west side was for a laboratory and maintenance offices, the addition on the south side of the building was for additional warehouse space and a shipping and receiving dock, the addition of the east wing added more office space.
- An area approximately 100 yards to the southeast of Building 708 along Ecology Way used to store sand piles, mulch, and salt sand.

3.3 Identification of Potential SWMUs not Listed in the 1991 RFA

As discussed in our meeting, four abandoned tanks contained fuel oil for heating purposes. These tanks were installed in approximately 1954 and were abandoned in place around 1957 when the site converted to natural gas. The tanks were emptied of product

and then filled with either sand or cement. The following table summarizes the tank location and size.

Location	Tank Size
Building 704	15,000 gallons
Building 712	13,000 gallons
Building 713 (Tank 1)	20,000 gallons
Building 713 (Tank 2)	20,000 gallons

The piping associated with these tanks was removed when the tanks were abandoned in place. Because these tanks had only been operational for approximately three years, DuPont believes that the integrity of the tanks was good and that no leakage from the tanks occurred prior to tank abandonments. Therefore, DuPont does not feel that these units warrant further investigation.

3.4 Miscellaneous Findings

Wastewater discharge is covered under the New Castle County Department of Public Works Water Discharge Permit (WPD 76-010, Revision 2), dated January 20, 1994, expiring January 19, 1999. This permit covers the Chestnut Run facility and grants discharge of wastewater to the New Castle County Sewer System under New Castle County Code.

The discharge of surface water is covered under the State of Delaware Division of Water Resources permit (NPDES permit No. 0000566, September 25, 1990). The permit renewal was submitted March 30,1995. This permit covers three outfalls: Chestnut Run (outfall 001); Willow Run (outfall 002); and Chestnut Run West Branch (outfall 003). The discharges consist of single pass noncontact cooling water, condensate, the west branch of Chestnut Run, surfacing spring water, and noncontaminated storm water from laboratories and service buildings. Regulated permit parameters are temperature, biochemical oxygen demand, total suspended solids, and pH.

All laboratory drains connect to the sanitary sewer. The sewer line has never been cleaned out to the best of our knowledge.

The water tank was used to maintain positive pressure in the water lines.

The crawl space (SWMU 9) in Building 711(E) was capped with concrete in June 1991.

The sump at SWMU 7 was visually inspected to confirm its integrity. No cracks were observed. The sump is visually inspected each week for fluid level and cracks. If liquid is present in the sump, the liquid is tested to determine if the liquid can be pumped to the ground surface (rain water can enter the sump). The water is tested for pH (must be between 6 and 8 to pump to the ground) and personnel look for the presence of an oily sheen or if the liquid has an odor. If there is any concern over pH, appearance, or odor from liquid collected in the sump, the water is containerized, labeled appropriately, and disposed of according to applicable state and federal regulations. Otherwise, the liquid is pumped to the ground surface. Annually, the sump is thoroughly cleaned and examined for possible cracks.

4.0 RECOMMENDATIONS

Other than the abandoned fuel oil tanks discussed in Section 3.3, no additional SWMUs were identified in this study that were not identified in the RFA. Of the 16 SWMUs identified in the 1991 RFA, all but three are active units. SWMU 2 (RCRA Interim Status Hazardous Waste Storage Pad) was closed under RCRA by the DNREC in January 1993. SWMU 9 (Building 711(E) Crawlspace) was capped with concrete. SWMU 4 (Building 708 90-Day Waste Accumulation Area) is no longer active, the pad was steamcleaned, and rinse water samples were collected and analyzed for tetrachloroethene and 2-hexanone. All laboratory results were reported as nondetectable.

All active 90-day waste accumulation areas are inspected on a quarterly frequency. DuPont recommends no further action for all SWMUs identified in the RFA or for the abandoned fuel oil tanks.

DuPont Environmental Remediation Services
Barley Mill Plaza 27
P.O. Box 80027
Wilmington, DE 19880-0027
Tel. (302) 992-6768

DuPont Environmental Remediation Services

April 12, 1996

Mrs. Patti Zietlow
State of Delaware
Department of Natural Resources and Environmental Control
Division of Air and Waste Management
89 Kings Highway, P.O. Box 1401
Dover, Delaware 19903

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION
DuPont Chestnut Run Facility
Wilmington, Delaware

Dear Ms. Zietlow:

Please find enclosed the report you requested at our March 7, 1996, meeting summarizing the approach DuPont used to address land use changes, disposal sites, construction chronology, and solid waste management unit identification at the DuPont Chestnut Run facility in Wilmington, Delaware. The aerial photographs used during our site evaluation will be sent under separate cover and may be retained by your office.

If you have any questions, please contact Mr. Robert B. Genau at (302) 992-6768.

Sincerely,

Robert B. Genau
Project Geologist

Robert D. Buller, PG
Senior Principal Geologist
Delaware No. 306

RDB:df
Enclosure

cc: E. A. Rittberg, DNREC (w/o attachments)
R. J. Beardsley, DuPont
File 3352